DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.9/14.3,0.0/1.6
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-000836
Date Inspected: 09-Nov-2007

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 1430
OSM Departure Time: 2300
Location: Shanghai, China

CWI Name: Sha Xi & Wang Gaifa

Inspected CWI report:	☐	Yes	☑	No	☐	N/A
Electrode to specification:	☑	Yes	☐	No	☐	N/A
Qualified Welders:	☑	Yes	☐	No	☐	N/A
Approved Drawings:	☑	Yes	☐	No	☐	N/A

CWI Present:	☑	Yes	☐	No		
Rod Oven in Use:	☑	Yes	☐	No	☐	N/A
Weld Procedures Followed:	☑	Yes	☐	No	☐	N/A
Verified Joint Fit-up:	☐	Yes	☑	No	☐	N/A
Approved WPS:	☑	Yes	☐	No	☐	N/A
Delayed / Cancelled:	☐	Yes	☑	No	☐	N/A

Bridge No: 34-0006
Component: OBG - Closed Rib Trials & Mock Up

Summary of Items Observed:
Orthotropic Box Girder (OBG):

The Caltrans Quality Assurance (QA) Inspector Charlie Franco was present at the time requested to randomly observe welding and associated operations being performed for the OBG Closed Rib Trial number 2.

Mock Up:

The QA Inspector randomly observed ZPMC tack welder Gang Zhiwu ID Number 070503030, utilizing the Flux Cored Arc Welding (FCAW) Process with ZPMC approved Weld Procedure Specification (WPS) WPS-B-T-2342-U2, to tack weld diaphragms as they were being fit up into closed ribs. The QA Inspector also observed several ZPMC helpers utilizing grinders to place the lands on other closed ribs. The following photographs provide additional detail.

The OBG T-RIBS:

The QA Inspector randomly observed ZPMC helpers utilizing grinders to remove cracked tack welds on T-ribs fit up on T-Rib Assembly Plate 38A in Bay 3. The QA Inspector also randomly observed that during the removal of the cracked tack welds, some of the base metal on T-Rib Assembly Plate 38A, had been removed. The QA Inspector randomly observed ZPMC Non Destructive Technician (NDT) Cai Xin Xin, utilizing the Magnetic Particle Testing (MT) method to examine the excavations in T-Rib Assembly Plate 38A, prior to performing base metal repair. The QA Inspector observed that there were a total of 10 cracked tack welds that had been removed,

and all 10 areas had excavations in the base metal of the T-Rib Assembly Plate 38A. The excavated areas were on Weld Joint (WJ) Number BP007-001-013 (3each), WJ BP007-001-017 (4 each), WJ BP007-001-22 (2 each) and WJ BP007-001-23 (1 each). The following photograph provides additional detail.

The QA Inspector randomly observed T-Rib Assembly Plate 39, being placed on the camber jig between T-Rib Assembly Plate 38A and the bay door of Bay 3.

Elevation 77M:

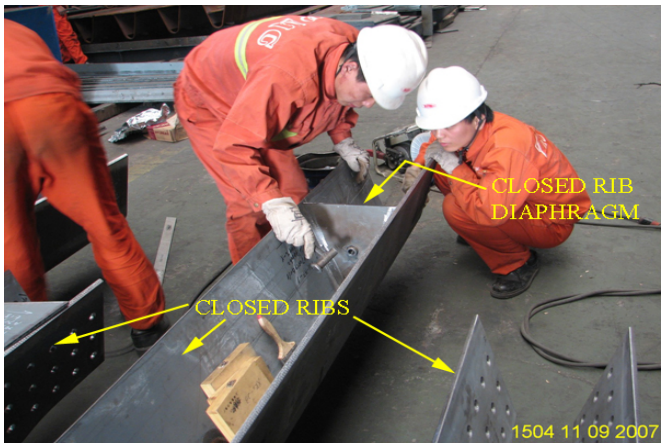
The Caltrans Quality Assurance (QA) Inspector Charlie Franco was present at the time requested to randomly observe welding and associated operations being performed for the fabrication of the Mock Up.

The QA Inspector randomly observed ZPMC welders Zhai Qingshan ID Number 048532 and Liu Wei ID Number 058026, utilizing the Shielded Metal Arc Welding (SMAW) process with approved ZPMC WPS WPS-B-T-4112-3, to weld the fillet weld attaching Flange Reinforcing Ring MUSA-SA273 to the Lower Diaphragm MUSA-SA104 at WJ MUSA-SA104B/B-1. The QA Inspector observed ZPMC CWI Sha Zhi monitoring weld parameters. The QA Inspector also performed random verification of the weld parameters and documented them as follows: welding amperage 227 amps, welding voltage 22.6 volts with a travel speed of 138 millimeters per minute for Mr. Zhai and 213 amps, 24.2 volts with a travel speed of 142 for Mr. Liu. Weld parameters appeared to comply with the above approved ZPMC WPS.

The QA Inspector randomly observed a ZPMC helper utilizing a grinder to grind flush and blend the weld reinforcement on the inside WJ MUSA-SA274-2 of Upper Diaphragm MUSA-SA95, Flange Reinforcing Ring MUSA-SA274.

Summary of Conversations:

Art Peterson of American Bridge/Fluor Enterprises, a JV, (ABF), informed the QA Inspector that both ZPMC and ABF had observed cracks in several tack welds attaching T-Ribs to Plate 38A. Mr. Peterson also informed the QA Inspector that the ZPMC personnel had "gotten a little carried away with the grinders trying to remove the cracked tack welds, and had removed some of the base metal on Plate 38A". Mr. Peterson further informed the QA Inspector, that the excavations resulting from the cracked tack weld removal would be examined with the Magnetic Particle Testing Method by ZPMC and then repaired.



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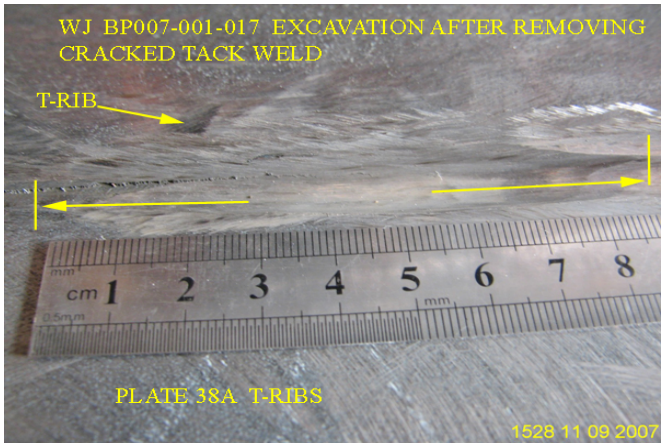

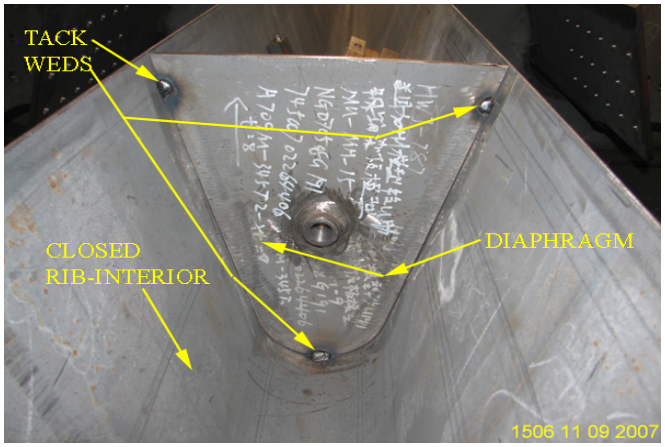

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Franco,Charlie	Quality Assurance Inspector
Reviewed By:	Cochran,Jim	QA Reviewer